IMMUNISATION RECOMMENDATIONS FOR CHILDREN AND ADULT PATIENTS TREATED WITH IMMUNE-SUPPRESSING MEDICINES

What are the aims of this leaflet?

This leaflet has been written to give you information about immunisations (vaccinations), which may affect you when you are taking medicines that act by suppressing the immune system. This includes information about vaccinations which are:

1. Recommended before you start immune suppressing medicines
2. Safe for you to have while you are taking this treatment
3. Need to be avoided

Which skin disease treatments can affect the safety of immunisations?

Some skin conditions, such as severe eczema, psoriasis and pemphigus, can be difficult to treat fully with creams and ointments, and in this case stronger treatments can be given, either orally (taken by mouth) or by injection. In general, we aim to use treatment in cream or ointment form to reduce the need for immune system suppression, but the severity of some conditions means that this is not always possible.

What medicines can suppress the immune system?

Some of the medicines which suppress the immune system are prednisolone, ciclosporin, methotrexate, mycophenolate mofetil, azathioprine, hydroxycarbamide and the treatments known as 'biological' agents e.g. etanercept, infliximab, rituximab, ustekinumab, and secukinumab. More of these treatments are constantly being developed.

These treatments are often called 'immunosuppressants' because they suppress, or reduce, the way the immune system works. In the healthy body,

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the immune system defends us against infection from bacteria and viruses, but in conditions where the immune system is causing too much inflammation and attacking the body itself, immunosuppressant treatments are used to reduce the activity of the immune system.

Why do I need advice about vaccinations and immune suppression treatment?

Vaccinations (immunisations) are treatments, often given as injections, which prevent or reduce the chances of getting certain infections such as 'flu, tuberculosis, measles and chicken pox. While taking immunosuppressants you will be more susceptible to infection, and it is often recommended that vaccinations against common infections such as 'flu or pneumococcal infection are given to boost your defence before you start immunosuppressant medicines.

Some vaccinations are 'live', meaning that they contain the bacterial/viral infection in a reduced form (called live attenuated) and can cause a mild version of the illness a few days after the vaccination. However, in someone whose immune system is reduced, the live vaccine can cause severe infection and therefore 'live vaccines' need to be avoided if you are taking immunosuppressants.

In other vaccinations the bacterium/virus is inactivated/killed, meaning that there is no risk of infection even in a mild form following the vaccination.

General Advice

- Inactivated vaccines should ideally be given at least 2 weeks before treatment, but can be given during immune suppression treatment.

- Live vaccines if needed, should be given at least 4 weeks before treatment with immunosuppressants is started.

- Live vaccines should not be given to patients taking immune suppression treatment (See specific advice regarding Shingles Vaccine).

- Live vaccination should not be given within 3 months (prednisolone) or 6 months (other treatments) of stopping immunosuppression.

- Although long term steroid tablets, or injections of steroid into the muscle, suppress the immune system, steroid creams or joint injections do not. Therefore it is safe to have live or inactivated vaccinations if you are applying steroids to your skin, or having steroid injections into your joints.

- Stopping immune suppressing medications for the sole purpose of administering vaccines may not be the best course of action, especially when your condition is active. Your doctor will discuss (weigh up) the risks and benefits of this with you.

- Vaccines are not usually triggers for disease flares and they should not be withheld for that reason.

- Additional information on use of specific vaccines is available at: http://www.patient.co.uk/health/immunisation-1366

Advice for the use of live attenuated vaccination in infants born to pregnant women on immunosuppressive therapy or mothers who are breast feeding whilst on immunosuppressive therapy:

- Any infant who has been exposed to immunosuppressive treatment from the mother either whilst in the uterus during pregnancy or via breastfeeding after birth should have any live attenuated vaccination postponed until the postnatal influence of the mother's immunosuppressive drug treatment on the infants immune system has faded away and is not causing any effect on the infants immune system. Specialist advice from an immunologist may be required to advise how long to postpone vaccination.

- In the case of exposure of infants to TNFα antagonists and other biological medicines in the uterus, the period of postponing live attenuated vaccination should be until the infant is aged 6 months old, after which time vaccination should be considered.

Should I have the influenza vaccination (Flu Jab)?

Ideally you should have the influenza vaccine ('Flu Jab') before you start the treatment and then have further influenza vaccinations **every year** while you are on the immunosuppressant therapy. This is because the flu jab is safe and effective at reducing the chance of your catching 'flu, which can be a very serious condition, especially when the immune system is not fully active.

The usual vaccine is given as an injection into the muscle of the arm. It contains egg, but vaccines can be egg-free or contain a very low quantity of egg. This may be an option for those who are egg-allergic or those following a vegan diet.

If someone has had a severe reaction (anaphylaxis) to egg products, or has an egg allergy with severe/poorly controlled asthma, the vaccine should be given in a specialist centre such as an allergy clinic.

A nasal influenza vaccine is used for children; as it is a live vaccine it is not suitable for those on immune suppression treatment, and as it contains egg, is not suitable for those with severe (anaphylactic) reactions to egg.

Should I have the Pneumococcal Vaccination?

Pneumococci are bacteria that can cause serious infections such as meningitis or pneumonia. If you are taking immune suppression treatment you are at increased risk of this infection and you should ideally have immunisation with pneumococcal vaccine before you start treatment. You might need a five-yearly booster immunisation.

Pneumococcal vaccine is usually given as part of the normal childhood vaccine schedule; if this was not completed please discuss with your doctor to see if your child needs a booster.

When Should I have Pneumococcal/Influenza vaccines?

These vaccines should ideally be given at least 2 weeks before the immunosuppressive drug is started.

Do not worry if you have not had the immunisations before starting treatment; there are several possible reasons for this:

- The doctor may feel that your treatment should be started without delay.

- It is not always possible for the doctor to be sure in advance that you will need the medicine long-term, so vaccination may not always be considered necessary.

If you did not have the vaccines before starting treatment, and vaccines are thought advisable later, these can be given by your GP on the advice of your dermatologist. Although inactivated vaccines can be given to

immunosuppressed patients, the response may be less than in someone not taking this medication. A blood test can be taken to check the response to the vaccine.

Is it important to know whether I have had chickenpox in the past?

Yes. This is because chicken pox can be a serious infection in someone whose immune system is not fully active. Discuss with your doctor/GP whether you have had chickenpox in the past. If you are unsure, a blood test can be done to check for antibodies to Varicella (chickenpox). If you are not immune (i.e. no antibodies are detected) you may be offered vaccination prior to starting treatment.

However, the vaccination in adults involves having 2 separate injections 4 to 8 weeks apart. As this may delay starting your treatment for up to 3 months your doctor may weigh up the options with you.

If you do not have protective antibodies and are already taking an immune-suppressing medicine, it is important that you tell your doctor/GP about any suspected contact with chickenpox, so they can decide whether you need an injection of chickenpox antibodies (*Varicella Zoster Immune-Globulin* (VZIG)).

Should I have the Shingles Vaccine?

There is a live vaccine to prevent shingles, which is being offered to people aged 70-80 in the UK (from age 70 years up until the 80th birthday).

It is considered safe for patients on low dose immunosuppressive medication to receive the shingles vaccine. Your doctor will advise if it is safe for you to have this vaccination depending on the dose of your immune suppressing medicine.

Are there other infections I need to watch out for?

When on immune suppressive medicines, if you have been in contact with someone with measles (and you are not immune), you may need an injection of human immunoglobulin.

You are at slightly increased risk of other infections, caused by bacteria, viruses and fungi. These range from common mild infections such as athlete's foot and verrucae, to potentially serious ones such as pneumonia and urinary infections. You should see your doctor if you are unwell, or have any

persistent symptoms such as fever, cough with phlegm or pain on passing urine.

What should I do if I am planning to travel?

If you are planning to travel while on treatment then you should let your doctor know. You should avoid live vaccines. Your GP or practice nurse will be able to provide you with up to date information on which vaccinations are required when travelling to different locations.

Some areas have travel clinics, which specialise in immunisations for travellers.

Always inform the doctors & nurses of your medical conditions and the medications you are on.

Which vaccines are safe, and which should be avoided when on immune-suppressing medicine?

Inactivated Vaccines (safe)	**Live Vaccines (avoid)**
Influenza	Measles
Pneumococcal	Mumps
Diphtheria	Rubella
Tetanus	Oral Poliomyelitis (OPV)
Pertussis	BCG
Haemophilus Influenzae Type b (Hib)	Oral Typhoid Vaccine (TY21a)
Hepatitis A	Yellow Fever
Hepatitis B	Nasal Influenza vaccine
Japanese Encephalitis	Chicken pox vaccine
Meningococcal	Shingles vaccine (can be used in some patients)
Inactivated Poliomyelitis (IPV)	
Rabies	
Tick borne encephalitis	
Monovalent whole cell typhoid	
Typhoid Vi polysaccharide antigen	

Vaccines for household members of immunosuppressed people

People who live in a household with immunosuppressed patients should have a flu jab using the inactivated influenza vaccine each year.

Other members of your household should not be given live oral polio vaccination while you share the same bathroom/toilet. If the live vaccine is given to them, then you should avoid close personal contact with the person given the live polio vaccine for 4 to 6 weeks. This is because there have been very rare cases of polio infection in contacts of people who have received the live oral polio vaccine.

A safe, inactivated injected polio vaccine (IPV) is now routinely given in the UK for babies having their primary course of immunisations, and this will not cause a problem.

Other live vaccines are safe for household members.

Where can I find out more about immunisation?

https://www.gov.uk/government/collections/immunisation
http://www.wales.nhs.uk/sites3/page.cfm?orgid=719&pid=22646
https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book
http://www.patient.co.uk/Search.asp?searchTerm=vaccines&collections=All

2013 IDSA guidelines for vaccination:
http://cid.oxfordjournals.org/content/58/3/e44

For details of source materials used please contact the Clinical Standards Unit (clinicalstandards@bad.org.uk).

This leaflet aims to provide accurate information about the subject and is a consensus of the views held by representatives of the British Association of Dermatologists and the United Kingdom Primary Immunodeficiency Network: individual patient circumstances may differ, which might alter both the advice and course of therapy given to you by your doctor.

This leaflet has been assessed for readability by the British Association of Dermatologists' Patient Information Lay Review Panel

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